THE VETERINARY RECORD

A Weekly Journal for the Profession.

Edited by WILLIAM HUNTING, F.R.C.V.S.

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THE BUXTON MEETING.

Everything is now fairly arranged for the annual meeting of the National Veterinary Association at Buxton on July 25th, 26th and 27th.

The meeting promises to be a large one and we again remind members that it may save trouble if they secure their rooms at once.

The papers are in the printer's hands and will probably be sent out so that readers may have a fortnight for their consideration. It is not often that the post miscarries, but any member not receiving his papers by the 13th inst. should communicate with the General Secretary.

The social functions, garden parties, excursions, etc., are unusually lavish and it is hoped that members will not neglect the common courtesy of replying to the invitations. Each man's modesty is apt to suggest that he will not be missed if he stays away, or cause inconvenience if he attends without notice. This is most fallacious reasoning and leads to confusion and trouble. In the matter, say, of vehicles for an excursion, perhaps ten are ordered so as to comfortably carry 100 persons. If ten extra men come unexpectedly every vehicle is overcrowded, and if twenty extra put in an appearance more vehicles are wanted and probably cannot be obtained. Failure to answer invitations has caused gross inconvenience at every meeting of the Association for four years past, and it is a curious thing that those who don't reply and yet attend assume a tone of injured innocence, instead of recognising their own selfish negligence and incivility. In Connemara last year eight persons joined the excursion on the last day with the result that the hotel in the Wild West was overcrowded and bedrooms had to be shared between three and sometimes four persons.

On another occasion dinner was ordered for 80. An extra 25 who had not taken the trouble to announce their intention of being present crowded in at the last moment to the inconvenience of everybody. It is unfair to the local committee, who work hard gratuitously, to have their best efforts neutralised by an act of discourtesy.

With the papers and invitations will be enclosed a post-card for reply, which it is hoped will in no case be left unused.

The Midland Veterinary Medical Society invite members to an excursion which will include visits to Chatsworth and Haddon Hall, with luncheon and tea. The President and Miss Trigger provide a garden party in one of the prettiest portions of the beautiful gardens. Admission to these gardens for the whole week will be provided for all those who desire it. The annual dinner cannot be satisfactorily arranged unless the number attending is known some days beforehand.

Members going from London on Monday, the 24th, will find a saloon carriage provided for them at St. Pancras on the 2.15 p.m. train, which is due at Buxton at 6. Fare for the return journey 24s. This train affords time for those residing south of London to reach town and travel down in luxury and good company.

OUR FRIENDS—THE MEDICOS.

We have many reasons for being grateful to the medical profession for assistance in the past. We all have friends in the "sister profession" whom we admire and who treat us as friends. But when it comes to business—especially to such business as brings the medical and veterinary professions into the closest contact—we are invariably treated with distrust and our aspirations obstructed. Where the two professions should work together most amicably is for the protection of the public against disease conveyed to man from animals. There is only one class that can be called expert in the matter of disease among animals and that is the veterinary surgeon. Dairies, cowsheds, stables, kennels, and their inmates are essentially our field of work. One would expect that knowledge and decency would lead local authorities and medical officers of health to employ veterinarians to inspect and watch over these places. It is not so. In hardly a single case has it been known that a M.O.H. has assisted the appointment of a veterinary surgeon—unless he can have the office made subservient to his direction. In one notorious case the M.O.H. is actually Inspector under the Diseases of Animals Acts.

On another page Mr. Stewart draws attention to the action of the M.O.H. at Cardiff, who actually presents a report advising his Council to discard the services of a veterinary surgeon for meat inspection and to employ him only to cure sick or lame horses. We confess we are not surprised; because we never knew a M.O.H. who failed to disparage veterinary work in his district. We are surprised that the authorities are so easily misled, and we wonder that in a progressive town like Cardiff the practitioners do not combine and refuse to accept any fifth-rate position devised for them by a member of the "sister profession."

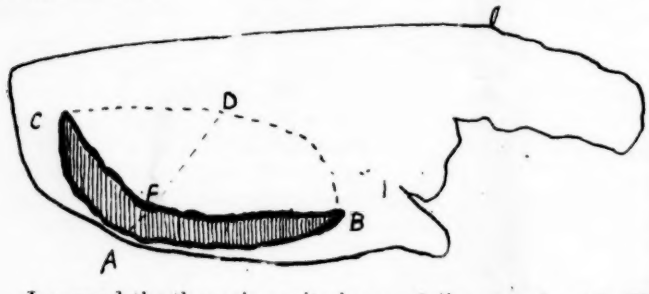
A CASE OF RUPTURED LUNG IN THE HORSE.

A short time ago, a horse belonging to a unit of which I am in veterinary charge, was found dead in its stall at daybreak. The stable-guard on duty had noticed nothing wrong until he roused the animals. I was immediately sent for, nothing being touched in the meanwhile.

On arrival, I found the animal lying on its left side with the head collar and chain still on, and not the slightest sign of any struggle having taken place.

There was a considerable quantity of blood in the manger and on the floor, which had evidently come from the nostrils, as a small quantity was still trickling from them. On examining the carcase, I found four small abrasions close together at the base of the neck on the left side, apparently caused by kicks, but the skin was not cut through. There were no other marks or bruises on any part of the body.

Post-mortem Appearances.—The left jugular vein was ruptured just beneath the afore-mentioned abrasions, and the surrounding tissues were infiltrated with blood, whilst the muscles at that point were lacerated.



I opened the thoracic cavity by carefully removing the ribs on the right side, and found it contained a large quantity of fluid blood, in which were some large clots. The colour suggested a mixture of venous and arterial blood. I then removed the lungs and heart bodily, and on turning them over was much astonished to find the left lung ruptured on its inner face for almost its entire length. A diagrammatic view of the inner face of the left lung, showing a rupture C.A.B. is here given.

From C to A is 6 inches, and from A to B, 14 inches in length. The depth of the rupture indicated by the dotted line from A to D was nine inches.

The curved shape of the rupture produced a flap, F, which could be lifted up, disclosing the torn lung tissue, some of which was adherent to the lacerated pleura, while the larger bronchi and pulmonary vessels were as cleanly stripped of lung tissue, as if they had been dissected. There was some hæmorrhage under the pleura and remains of blood clots on the torn edges, while the bronchi leading from the ruptured part were filled with clotted blood. There were no broken ribs or fractures of any kind to account for the lacerated lung The heart was quite empty. Death was undoubtedly due to internal hæmorrhage from the ruptured lung and must have occurred very quickly, but I cannot uuderstand how the rupture was brought about. Perhaps some of your readers may have met with a similar case.

W. E. Schofield, Lieut. A.V.D.

Pretoria, 8th June.

TRAUMATIC PNEUMONIA IN A HORSE.

Subject.—Bay Waler gelding, 15 hands high, aged.

History.—May 29, found to have expelled a lumbricoid worm, so was dosed by attendant with about two quarts of a mixture which seemed to be composed of equal parts of crushed mustard seed, salt, turpentine and mustard oil; as it did not take this delectable mess readily a piece of galvanised iron pipe was procured, 2 in. in diameter, and 2½ ft. in length, the head was racked up to a roof and the pipe put as far down the throat as it would inconveniently go, and the mixture poured down the pipe; immediately after this heroic treatment some of the mixture returned through the nose and the result was a suppressed cough. My attention was called at this juncture and the horse almost immediately went down and showed abdominal pain as well as the chest trouble.

Diagnosis. Traumatic broncho-pneumonia.

Prognosis.—Death.

Treatment.—Expectant, in accordance with prognosis, evening temperature 102·5, pulse 82, cough suppressed, no appetite. Between date and 3rd June, temperature rose to 107·5, pulse to 95, and no food was taken at all; farrier's messes and boiled linseed were put down the iron pipe to make the prognosis more sure, and death ensued at 6 p.m. on latter date. The pneumonia did not take on a gangrenous form at all, although the shade temperature averaged 112 during time of illness. Death appeared to be due to extreme exhaustion and shock as well as pneumonia.

The Doctor Sahib.

ABSTRACTS FROM FOREIGN JOURNALS.

Transplantable Lympho-Sarcoma of the Dog. By Anton Stictner, M.D.

(*Continued from p. 3.*)

All these experiments prove that the localisation of the sarcoma is due to a mechanical agency collecting and bringing the tumour mass to a certain place.

Secondly, the prominent peculiarity of the omentum to form new vessels has much to do with it. This peculiarity according to Rauvers is found in no other organ of the body.

Of tumour masses implanted in the thoracic cavity in a few cases, 57 days after inoculation, both parietal layers of the pleura were studded with a thousand nodules of the size of an oat and millett seed, for the most part accumulated in the intercostal spaces.

The mediastinum was infested its whole extent with large multiple tumours, and in its anterior and posterior portions and in the neighbourhood of the heart a mass as large as one's fist formed. The lung was only involved on its right side, and on the middle lobe there were several nodules, and on the sharp edge of the posterior lobe small commencing nodules were noticed. The parenchyma of the liver was infected with many small white nodules. In the retro-peritoneal space behind the kidneys there was a solid tumour as large as a plum.

Implantation of tumour cells in the scrotum formed a swelling as big as a goose's egg. The testicular substance, except for a small portion of the under side of the tumour had disappeared. There were several tumours as large as a cherry in the spermatic cord. Five nodes were present near the pancreas and inside the nodes were cysts as large as a pea containing fluid similar to lymph. Such cystic tumours arising from metastases of the lymphatic glands occurred on both sides of the aorta.

Implantation into the bone at the end of the tibia produced a tumour on the 29th day and on the 92nd day death occurred, and the proximal end of the tibia and cavity of the stifle joint showed nodules the size of a linseed or chestnut. In the spleen there were several sharply defined nodes.

G. M.

(To be continued.)

Udder Tubercle.

The Swedish Medical Board have published the following notes in order to diffuse knowledge about tubercle of the udder.

Tubercle of the udder in cows is generally a slow disease, and may be recognised by changes in the gland, the quality of the milk, and general condition of the animal.

At the onset of the disease in most cases there is a swelling, not painful, generally in one quarter of the udder, and that a hind one. The swelling becomes gradually harder, gritty, and increases in size till at last after a few months as a rule it is quite a large swelling.

But there are exceptions to be noticed. For one thing the disease and the swelling may have a very rapid course, or as the disease progresses the swelling may soften and disappear; and tubercle of the udder may take the form of nodules the size of a nut or the head of a match, either smooth or rough on the surface.

If the tubercle is in a hind quarter the neighbouring lymphatic glands will be enlarged often to such an extent as to be quite noticeable. The milk at first is normal or apparently normal, it may be a little less but not always, for a month or so it keeps its ordinary appearance, but then becomes gradually watery, then flaky and yellowish, and much increased in quantity. After the milk from the healthy quarters has shrunk the secretion from the diseased quarter is still copious. When the disease is of the nodular form the milk retains a normal appearances. Generally the general condition of the beast is not altered at first, but later the usual wasting sets in and lasts from two to four months, slow at first then very rapid, and the beast dies after a short febrile exacerbation.

It is rare that tubercle is confined to the udder in cows it nearly always affects other organs too, the udder may have a swelling that is not tuberculous but the beast may react to the tuberculin test owing to the disease being present in some other organ, which of course can only be proved post-mortem.

Non-tubercular inflammation of the udder may be distinguished by the swelling being generally more rapid and the inflammatory symptoms, upon the subsidence of which the udder is diminished in size instead of remaining permanently enlarged.

But the best guide is the milk, in tuberculosis the milk is increased and nearly normal in appearance, in mastitis it is decreased and much altered in quality.

Tubercle is due to a well known bacillus, while mastitis is produced by different kinds of micrococci. —*Deutsche Landswirth. Presse.*

F. E. P.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION

The quarterly meeting was held at the Grand Hotel, Manchester on June 1st, the President, W. Packman, Esq., in the chair, and the attendance included Messrs. W. A. Taylor, Wolstenholme, Woods, McKinna, Garnett, Carter, Stent, Ackroyd, S. Locke, H. L. Roberts, Munro, M. T. Giblin, Sumner, Adamson, Prof. Williams, Worthington, F. G. Edwards, and Brittlebank.

Visitors:– D. C. Campbell, J. B. Chadwick, Capt. Dunlop-Smith, A.V.D., Capt. MacDougall, A.V.D., and Capt. G. M. Williams, A.V.D.

Apologies for absence were received from Messrs. Hughes, Faulkner, Somers, and Abson.

On the motion of Mr. Carter, seconded by Mr. S. Locke, the minutes of the last meeting were taken as read.

A letter of resignation was received from Mr. A. K. Hart. The President said they regretted that Mr. Hart had to take this course.

Mr. D. C. Campbell, of Manchester, was nominated for membership by Mr. Wolstenholme.

The Secretary submitted copy of a circular which had been sent to every Veterinary Society throughout Great Britain and Ireland, in reference to the consideration of a scheme, the object of which is the return of a Veterinary Surgeon to the House of Commons.

Acknowledgments were read from the Secretary, Royal College of Veterinary Surgeons, The Central V.M.S., Scottish Metropolitan V.M.S., Southern Counties V.S., and the Liverpool University V.M.A.

The next business was the postponed discussion on Mr. Roberts' proposal "That a Committee of the Lancashire Veterinary Medical Association be appointed to collect Parliamentary intelligence which might be considered beneficial or otherwise to the best interests of the veterinary profession, the Committee to report the particulars of their information at each quarterly meeting of the Association."

Mr. Roberts desired to say a few words as to the object for appointing such a Committee. He explained that it was not with a feeling of antagonism towards the Royal College of Veterinary Surgeons or with the

idea of taking work out of the hands of any existing Committee of the Royal College. He thought that his suggestion was fairly well borne out in a report in *The Veterinary Record* relative to the last Council meeting where a similar subject cropped up. The Chairman of that meeting said they were utterly unable to obtain information at an early date of Bills which were being promoted in the country, and he looked forward to representatives of the various societies helping them by bringing under notice all Bills that may be promoted by Local Authorities. He (Mr. Roberts) thought that amongst such societies as theirs they should be able to furnish the Royal College of Veterinary Surgeons at an early date with particulars of proposed Bills, and thus help in securing a proper place for the veterinary surgeon in public health departments. The veterinary surgeon should be recognised by such bodies in the first instance and not require pleading to.

Mr. G. H. LOCKE read a letter from Mr. J. Fraser, Past President of the Council, suggesting that if the profession desired to send one of its own members to Parliament, a Committee should be formed representative of all the Veterinary Societies of Great Britain and Ireland to meet as early as possible and discuss a scheme to lay before the profession. He (Mr. Fraser) would be pleased to visit any society within his reach to assist the project.

Mr. GARNETT said it gave him pleasure in supporting the proposal. He thought there would be a great improvement if every member of the profession undertook to report to the Royal College of Veterinary Surgeons whenever his particular district council or town proposed to bring a Bill before Parliament containing clauses appertaining to their own profession. If that were done then the Royal College of Veterinary Surgeons could do something in the matter. With regard more especially to the point raised, of being represented in Parliament by a veterinary surgeon, he thought that if a Committee was to be formed it should be formed among members of the larger societies such as the Lancashire, Yorkshire, the Midlands, and Liverpool Societies. If a workable scheme was to be propounded it must of necessity require many meetings being held, and for that reason he thought it desirable that the persons who composed the Committee should be from the large centres of industry.

The scheme roughly sketched by Mr. Fraser was, he thought, a good ground work to start upon. Probably the first duty of the Committee would be to ascertain the feelings of the profession as a whole, secondly to draw up a workable scheme which would certainly necessitate the provision of considerable sums of money, and thirdly to select such a constituency where they might reasonably hope to achieve success. He was not referring now to political parties at all, because the Committee would have to work irrespective of party. He was pleased that the subject had been raised and gave it his entire support.

Mr. MACKINNA also expressed deep interest in the subject. He believed that in Parliament it was possible for any private member to stop any Bill such as those mentioned, or raise an objection for the time being and, therefore, it required their attention individually as well as collectively. He supported the proposed Committee, trusting that it would be representative, and that it would, from time to time report to the Council. He felt sure that the existing Parliamentary Committee would take the greatest interest in the matter.

Mr. GARNETT desired to add that the Butchers' Associations have their members in Parliament and he thought that if the butchers could accomplish this surely the veterinary profession should be able to do so.

Mr. WOLSTENHOLME did not agree that a small Committee should be formed of the various veterinary associations to collect evidence of this kind and transmit to the Central Authority in London. It appeared to him that every member of the profession had his duties as well as privileges. It was the duty of every citizen to prevent, or aid in preventing crime in the streets, and to aid any officer in the discharge of his duty. If every municipal ward should form small Committees to assist policemen in their duty of preventing larceny whenever they see it, then it appeared to him to be attempting to get out of the individual duties of individual citizens. In the same way he regarded these municipal Bills sent up to Parliament. If any member knows that something is inserted in such a Bill which demands the attention of the veterinary profession then that member, instead of writing to a Committee of the Lancashire, or Midland, or other Society which only meet at intervals, should advise the Central Authority in London. They had there a permanent Secretary who would call the attention of the President to these matters.

As to the desirability of having a veterinary surgeon in Parliament that was certainly a *desideratum*. Their position had been compared to that of the butchers, but the comparison was not fair because the butchers' were much more numerous. There may be in some part of the country a gentleman respected for his social and perhaps even political views who might be a *persona grata* in the constituency, and who might even desire to represent their profession.

Prof. WILLIAMS said that on several occasions he had rather deprecated the idea of their profession endeavouring to send one of its members to Parliament. To begin with, he would require to be a party man and would have to do according to the dictates of his party. What he (Prof. Williams) contended was that if they wished to protect the interests of the profession they would have to pay for it, and they could not get such protection without. It was well known that the most influential men connected with Parliament are those who have admission to the lobby. They know men of all parties and could use their influence in the blocking or passing of Bills. He would, therefore, urge the profession instead of seeking direct representation to pay some person to become a "Lobbyist" on their behalf. Such a person would be able to see the various Bills brought forward and would take measures to have them postponed until the Royal College of Veterinary Surgeons or its Parliamentary Committee had decided what opposition would be given to the particular Bill.

Mr. PACKMAN referred to a letter from Mr. Faulkner expressing his opinion that it would be better to refer this subject to the Committee appointed by their Society to deal with such matters. He (Mr. Packman) thought that to be a good suggestion, and proposed "that this matter be left in the hands of the Standing Committee of the Association."

Mr. TAYLOR thought the matter to be of such importance in connection with both subjects as to require further consideration, and he therefore seconded the proposal, with the additional words "with power to co-opt," in order that they might have assistance from other members and associations. They would then report to another meeting of this Association.

Mr. PACKMAN desired to add the words suggested by Mr. Taylor to his proposal.

PUBLIC HEALTH CONGRESS.

The next business was the consideration of a letter from the Royal Institute of Public Health in reference to the Congress to be held in London from the 19th to the 25th July, 1905.

Mr. WOLSTENHOLME desired to state before the question of appointing delegates for this Congress was considered, that following out the resolutions of the previous meeting he had forwarded the sum of £20 towards the equipment of the Manchester Public Health Laboratories. That sum had considerably lessened the funds

of the Society, and in his capacity as Treasurer he would suggest that no delegates be sent to the Congress this year.

Mr. McKinna hoped they would send delegates whether expenses were paid or not. Expense should be a secondary matter in a question like this. He, therefore, proposed that at least one delegate be sent to the Congress meeting at London this year.

Mr. Carter had pleasure in seconding this. He certainly thought they ought to be represented even if the subscriptions had to be increased..

Mr. Wolstenholme said that under the circumstances he would propose that the President be appointed as delegate. This was seconded by Mr. McKinna.

Mr. Packman thanked the meeting and expressed the pleasure he would have in attending the Congress as their delegate.

Mr. Wolstenholme drew attention to the International Veterinary Congress to be held at Budapest in September, 1905. At the last Congress two delegates were sent.

Mr. Garnett asked if there had been any invitation to send delegates.

Mr. G. H. Locke replied that only an indirect invitation had been received.

Mr. Garnett thought that as one of the largest societies in the kingdom they ought to send delegates to this Congress also, and he therefore made that proposal, and that the sum of £25 be allowed for expenses. Mr. Carter seconded.

Prof. Williams said his experience as a delegate at these International Congresses was that he had not been able to take much part in the proceedings. He believed that for a subscription of two or three guineas, all the papers, etc., translated into English, could be obtained, and he thought these would be of more benefit to the Society than sending a delegate. He was speaking as an economist who desired to support the Treasurer, and did not move this as an amendment.

Mr. Packman felt very strongly in this matter and associated himself with the remarks of Prof. Williams. Their funds amounted to about £40, and to devote £25 to the purpose indicated would make a considerable gap. The translated papers were of more value than the few hours one spent at the Congress.

Mr. Woods speaking as one who had been a delegate did not know whether any benefit accrued that would not accrue without sending a delegate. He attended the International Congress at Brusse's and felt that he had achieved so little as not to feel justified in allowing his expenses to be paid, and he adopted that course.

Mr. Locke observed that if everybody took that view there would be no Congress. He thought that both their own and every other society in England should be represented.

Mr. Garnett, replying to Mr. Woods' observations, said he did not suppose that Mr. Woods' attendance at the Brussels Congress had done the society nor its representative much good, but he (Mr. Garnett) thought that if the profession had been alive to the importance of these Congresses in the past and taken its proper place it would not be in the position it now is.

On the proposal being put to the meeting four voted in favour and three against

Mr. McKinna then proposed that the President be selected as delegate.

The President, however, declined.

Mr. Wolstenholme proposed that Mr. Woods be the delegate. It was almost essential that the gentleman selected should be able to understand French. English was scarcely spoken, and the translations made are of a meagre description. Mr. Packman seconded

Mr. Woods said he did not think the Society would get value for their money and should not pay the whole of the expenses. He would not care to take it on those terms, and indeed he was not sure whether he could go.

Mr. Packman said he was sure there was no gentleman in the room better able to represent the Society than Mr. Woods, and he trusted that the appointment would be accepted.

Mr. Carter proposed that in the event of Mr. Woods being unable to go to Budapest their President be asked to go. This arrangement was adopted.

TETANUS, WITH REFERENCE TO ERLICH'S 'SIDE CHAIN' THEORY IN ACQUIRED IMMUNITY.

By H. L. Roberts, F.R.C.V.S.

Definition. Tetanus or lockjaw is a specific disease characterized by tonic and clonic spasms of groups of voluntary and involuntary muscles, associated with partial suspension of the normal functions of the digestive and urinary apparatus. The disease has been known to observers for centuries, it is said warriors used to soil the points of their arrows with earth previous to giving battle to an enemy, in order that the wounds caused by the piercing of the flesh would prove fatal by the onset of Lockjaw.

Bacteriology.

The cause of the disease is a bacillus, or rod-shaped micro organism. Cases of tetanus may be divided into "traumatic" and "idiopathic;" the former term implies tetanus supervening on an obvious wound, and the latter denotes tetanus in which the wound or point of infection is not discovered. The organism has a wide distribution in nature, is frequently found in soil, particularly garden soil, and more frequently in some districts than others, it is also sometimes present in the excreta of animals, in manure heaps; refuse and dirt from the streets offer an asylum for the bacillus. It lives outside the body as a saprophytic organism on dead organic matter; in the body it occasionally multiplies and is an example of a facultative parasite.

In the body it is usually confined to the wound and its immediate neighbourhood, and does not tend to invade the system, it has little or no tendency to be carried by the blood or lymph streams, it is for the most part a tissue parasite. As previously mentioned, the causal organism is a bacillus and is named the Bacillus of Nicolaier, in honour of the discoverer, it is also known as the drum-stick bacillus, owing to sporulation taking place at one end; it may be mentioned here that sporulation is of immense advantage to the species that possess it, inasmuch as the spores are usually more resistant to germicides or any influences which tend to destroy the life of the organism; sporulation is essentially a method of reproduction and not multiplication, which latter process takes place by the mesial division of the bacillus. The spore, when once formed lies dormant, and as soon as circumstances become favourable in respect to temperature and moisture, it gives rise to a vegetative element. The bacilli are nearly straight, their extremities pointed. Sometimes they form irregular chain-like segments. The bacillus is motile, the power of movement is due to the possession of cilia, consequently it can change its place. The bacilli stain with basic analine dyes, also by Gram's method, but best with Neilson's solution. By the Ziehl-Neilson method and methylene blue the spores are stained red, in contrast to the bacilli which are stained blue. The bacilli are anærobic and therefore will not grow in the presence of oxygen, they grow and sporulate even at the summer temperature. The cultures have an unpleasant putrid odour, old bouillon cultures contain tetanus toxin, a most powerful poison, which after subcutaneous injection or introduction into a wound, is absorbed by the nerve trunks, and carried to the central nervous system;

which absorption produces symptoms which cannot be differentiated from those associated with a natural attack of tetanus.

The bacilli can be grown in gelatine at the ordinary temperature but most readily at the temperature of the blood in an atmosphere of hydrogen in specially constructed flasks; the addition of 1-2 p.c. of grape sugar, or 0·3 p.c. of sodii sulphindigotate to the nutrient medium favours the growth, the grape sugar or sodii sulphindigotate acts as a reducing agent. The cultures liquefy gelatine and liberate gas. In slightly alkaline broth and peptone in an atmosphere of hydrogen, the gas formed will be sufficient to break the flask if it is sealed up. The spores are said to be killed by exposure to steam for five minutes, a 5 p.c. solution of carbolic acid with 5 p.c. hydrochloric acid will destroy the spores in two hours.

The bacilli at the seat of inoculation may multiply under favourable conditions, one of which apparently is the presence of pus, which thus constitutes a mixed infection.

Animals Naturally Attacked.

Probably all the domestic animals are susceptible, but in practice it is more frequently encountered in the horse, which is probably explained by the greater risks to infection The fowl is absolutely immune. In cattle the writer has met with two cases following on parturition, both patients were young animals, the act of delivery had been performed without any accident, but expulsion of the placenta had not been complete, which retention was relieved by the cowman. Tetanus supervened after the lapse of four days. In sheep it is occasionally seen after shearing, docking and castration.

Lesions.

Such lesions as are met with in the wound in cases of traumatic tetanus are probably for the most part due to other organisms accidentally present or in the immediate neighbourhood. The tetanus bacillus in company with pyogenic and other pathogenic organisms propagates and produces tetanus toxin, which is rapidly absorbed by the nerve path, and is a good example of intoxication with a poison, *e.g.*, strychnine.

Extreme degree of susceptibility is sometimes termed predisposition. The predisposing causes are—injuries in which the process of repair is nearly complete; recent surgical or accidental wounds: extreme youth (as in foals and lambs) with an imperfectly healed umbilicus, the act of parturition, an insanitary condition of the stable or cowhouse, and the use of peat moss for bedding. The horse is far more frequently attacked than other animals, but all domestic animals are susceptible, the frequency of the disease in the horse is probably not so much due to special susceptibility, as to the greater risks of infection. Any circumstance or condition, which tends to lower the vitality of the subject will act as a predisposing cause, which may be described as favouring the action of the exciting cause; consequently accidental wounds on the external parts, particularly those which are likely to come into contact with the ground, are most dangerous, *e.g.*, wounds of the foot, scrotum and tail. Wounds of the mucous membrane caused by the larvæ of the gastrophiles, which are sometimes firmly attached to the wall of the stomach, are possible points of infection during certain months of the year.

Incubation.

The length of time which elapses between the introduction of the virus, and the manifestation of symptoms, will depend on the amount of toxin or organisms introduced, and will be largely influenced by the condition and temperment of the animal. In cases of artificial infection the period of incubation is said to be 24 to 75 hours. In clinical tetanus the period of incubation is from 6 to 29 days.

Symptoms.

A symptom may be described as an appreciable manifestation of a diseased condition. Acute cases of tetanus are characterised by all the symptoms being fully developed on the third or fourth day from the onset of the disease, and it is in the majority of these cases that a fatal termination is seen, hyperæsthesia, loss of locomotor power, and rapid collapse being most marked.

In the sub-acute or chronic form the symptoms are more gradually developed and may not be fully manifest until the 12th or 13th day of illness, it is in these cases one may hope for recovery. In the horse, in the early stage slight anorexia will be noticeable, with probably a half finished meal in the manger, the patient will be found to exhibit difficulty in deglutition, stiffness in movement, particularly about the regions of the head and neck, which parts will be found on digital examination to be cramp-like, owing to the excessive tonic contraction of the muscles; nervousness and excitability will also be increased and breathing accelerated. The internal temperature at first is only slightly raised, generally only to the extent 2° F.; but in advanced cases which have a fatal termination several degrees above normal may be registered. The pulse at first is not much affected; as the disease advances it becomes hard and incompressible, towards the end of a fatal case the pulse becomes rapid, small, and feeble. The nose is protruded, nostrils widely dilated, the tail slightly raised and quivering. The patient will move with stiffness of the hind quarters, the legs will be widely separated. The surface temperature is irregular, the skin becomes moist in patches from perspiration, the membrana nictitans is pushed more or less over the anterior surface of the eyeball and is very conspicuous if the head is slightly raised, the pupils of the eye are dilated, and the face wears a haggard expression. Urination is suspended through spasmodic contraction of the neck of the bladder, defæcation is irregular and sometimes suspended for a long period. The animal is thirsty, and if water is taken it is returned through the nostrils, causing a paroxysm of coughing, which greatly excites him. He will be seen to move his jaws with difficulty, and often it is almost impossible to insert the fingers or a blunt instrument between the upper and lower jaws; grinding of the teeth, associated with a flow of sour smelling saliva of ropy consistence from the corners of the mouth. If sloppy food is given at this stage, the patient is observed to suck the same as the jaws are almost fixed. The abdomen is tucked up, the intercostal muscles and the diaphragm act indifferently; at this stage the animal perspires freely, the visible mucous membranes are injected. The excitability of a finely bred horse is greatly increased, hyperæsthesia is most pronounced—either the rustle of the straw bedding, the rattling of a halter chain or the sudden brilliant illumination of the box or stable will throw the patient into a general nervous paroxysm.

When the muscles of the face are chiefly affected, the disease is called "Trismus." When the muscles of the back and loins are the structures disturbed, producing an elevation of the head and neck and bending of the loin downwards, the condition is termed "Opisthotonos." "Emprosthotonos" is the state of muscular contraction opposed to opisthotonos, while pleurosthotonos is the name given to the bending of the body in a lateral direction.

Death during an attack of tetanus is produced in several ways: It is the direct result of the toxin acting upon the central nervous system; (2) sometimes the result of continued spasms of the respiratory muscles;

(3) sudden death is said to be due to spasm of the heart muscle; but death is generally due to (4) exhaustion and absence of nourishment which is required to replace the loss caused by the severe and continued symptoms. Pneumonia is often a sequel and may be due to the entrance of a foreign substance, such as food, medicine, or saliva, into the lungs, and is often the cause of death.

In cattle, tetanus sometimes supervenes upon a difficult parturition, in which manual assistance has been given. Metritis may or may not be a predisposing cause, or tetanus may follow a case of retained placenta—which has been removed by the cowman or owner, a certain amount of injury having been inflicted on the mucous membrane of the uterus or vagina. The symptoms in the cow are similar to those exhibited by the horse, but excitability is not so marked. The stiffness of the limbs, the hardness of the muscles of the head and neck, with trismus and dyspnoea are present. associated with an accumulation of gas in the rumen. Bovines which have been recently castrated occasionally fall victims to this disease.

In pigs after castration, the signs of trismus are sometimes observable, the hardness of the muscles extends to all the other regions of the body; in the early stage the convulsive movements must not be mistaken for epileptiform seizures which often accompany the helminthiasis of young pigs.

In dogs, clinical tetanus is rare. The writer once saw a case in a hound puppy which was being walked by a local butcher, the animal had sustained an injury of considerable depth to the fore limb about a fortnight previous to our visit. The discharge from this was thin and ichorus, the hairs surrounding the edges of the wound were matted together, and literally covered with filth. The symptoms exhibited were similar to those shown by the horse, the reflex irritability was most marked, the eyes sunken, when the animal was made to walk he progressed with his legs widely apart, and after proceeding a yard or so fell down in a state of utter collapse. Treatment was not advised as we then considered the case too far advanced to be carried out with any hope of success.

Tetanus sometimes supervenes in the goat after castration.

It has been said that the stationary vegetation of the bacillus of tetanus gives rise to formation of a poison which causes a general intoxication of the system, likewise the growth of the bacilli *in vitro* in suitable media and under favourable conditions generates the tetanus toxin, and it has been observed that an injection of some of the filtered toxin into the animal economy produces symptoms which are indistinguishable from those of clinical tetanus. This experimental knowledge has been made use of in the preparation of tetanus anti-toxin, or antitetanin. (*a*) Hewlett says that acquired immunity may be induced by several methods, one of which is the treatment of an animal with bacterial toxins, the animal then acquires a certain degree of insusceptibility. The blood serum of an animal so treated is termed an anti-toxin or anti-serum, and this anti-toxin has the power of neutralising the action of the tetanus toxin. (*b*) Meyer and Hansom, by experiment in the laboratory have shown that if you close the channel of absorption for the tetanus anti-toxin, then inject a neutral mixture of toxin and anti-toxin into the paw of a guinea-pig, the solution will break loose from its combination, and the toxin will proceed on its course through the nerve tracks to the central nervous system, where it produces tetanus. The interaction between the toxin and the anti-toxin is regarded as a definite chemical combination; if however a definite lapse of time has taken place after the mixing of the substances the combination is so firm that the toxin will not break loose, even if the circulations of the part have been inhibited by the injection of adrenalin. In what manner and through which agencies is this union effected?

Before the answer can be given, we must proceed to study the question of acquired immunity to tetanus. The explanation of the "side chain" theory propounded by Erlich appears to go a long way in the solution of the problem. (*a*) Erlich assumes that the toxin molecule possesses two different combining groups: one, which may be designated the "haptophore" group, which conditions the union with the cells, and also with the anti-toxin; while the other, which may be designated the "toxophore" group is the cause of the toxic action But the immediate cause of the toxic action is the presence of "toxophile" groups in the cells which unite with the toxophore group of the toxin. If toxophile groups be absent the toxophore groups of the toxin are unable to act and no toxic action ensues. (*a*) Erlich also assumes that protoplasm is composed of molecules bearing on them atomic groups, the "side chains" of the organic chemist—by means of these "side-chains" nutrition and other chemical functions are carried out; nutrition, he believes, consists in the linking of the "side-chains" of food stuffs to suitable receptors or side-chains of the molecules of the animal matter.

If we apply the view that haptophore groups of the toxins are molecular groups fitted to unite alike with the receptors of the cells and with the anti-toxins, the relation of the toxin to the cell is more obvious. The haptophore groups would seem to act especially in bringing definite areas of the cell within the sphere of influence of the toxophore groups. This combination of receptive or haptophore groups with the receptor or haptophile groups of the living cells produces damage to the protoplasmic elements, and repeated damage followed by recovery is attended by over-production or hypertrophy; this well known law of Weigert applies to the receptor groups of cells.

Production of Antitoxin in the Body.

As a consequence of the continued repeated injections of toxin, the cells of the animal body begin to reproduce haptophile or receptor groups in excess, more than are sufficient to replace those that have combined with the haptophore groups of the toxin, and ultimately this goes on to such an extent that these receptors of groups can no longer all remain attached to the cells, they are cast off and float free in the blood. (*a*) These free receptor groups Erlich believes constitute the specific anti-bodies —the antitoxic substance.

In disease, by injecting antitoxin, the anti-bodies unite with the toxin, prevent the latter from uniting with the cells, and so render the toxin inert. Probably the free receptors of the antitoxin have a greater affinity for toxin than the fixed receptors of the cells. By injecting a larger dose of antitoxin the union of the toxin with the cells is broken up, the toxin breaks loose from the cell receptors in order to combine with the anti-toxin receptors.

In artificial or in acquired immunity to tetanus in the domestic animals, I think phagocytosis plays only a secondary part, and then only as regards the actions of the phagocytes in the immediate neighbourhood of the wound, and for the same reason, viz., the stationary vegetation of the bacillus. I do not think bacteriolysis assists to any great extent in the production of acquired immunity to the disease under consideration.

Preparation of Toxin.

Toxin broth is prepared by the culture of bacilli tetani in bouillon for four weeks in an atmosphere of hydrogen, or in sterilised bouillon to which a reducing agent, *i.e.* 1 per cent. grape sugar has been added. The toxin broth is filtered through a bacteriological filter, consequently the filtrate only contains the toxin.

(*a*) Immunisation of the Horse.

A young horse, which has been tested to prove freedom from glanders or tuberculosis, is selected. The toxin prepared is weakened by the addition of an equal volume of Gram's iodine solution; of this mixture gradually increasing doses are injected subcutaneously under antiseptic precautions, starting with a dose of ℥viii. and gradually increasing the amount for six weeks. Then a mixture of two parts toxin and one of iodine solution is used, the dose being increased from one to two fluid drachms. After the elapse of a period of twelve weeks from the date of the first injection pure toxin may be used; when injection into the jugular vein is the usual method, beginning with two drachm doses and gradually increasing the dose until a high artificial immunity has been reached.

Preparation of Antitoxin.

After the elapse of at least a week from the completion of the toxin injections, a quantity of blood is extracted from the jugular vein, with antiseptic precautions, by means of a trochar and canula, and conveyed into a series of sterilised bottles or jars. The drawn blood is allowed to coagulate in a cool place; after 24 hours the serum which has separated from the crassamentum is carefully drawn off by means of sterile pipettes, or decanted direct from the bottles; to this is added 0·2 per cent. carbolic acid. The serum is subsequently stored in glass vessels of a dark brown colour, the stoppers of which are sterile indiarubber plugs. Sometimes the antitoxin is dyed by means of a special apparatus, *in vacuo* over sulphuric acid, this dessicated serum is often prepared on account of the longer period it remains active as compared with the fluid anti-serum.

Treatment.

Prophylactic—(*d*) With regard to prophylaxis, in all cases of deep, badly contused, lacerated wounds, or where dirt has gained an entrance, such antiseptic methods as we elect to carry out ought to be supplemented by the injection of tetanus anti-serum, the animal would then possess a number of anti-bodies, which would protect the economy against the most dreaded sequel of those classes of injuries which the veterinarian is at different times called in to treat.

Curative.—Curative treatment must be carried out with a knowledge of the contagious nature of the disease, and although the curative power of drugs in combating this malady is almost *nil*, certain advantages are claimed to have been gained by the administration of sedatives. It is absolutely necessary the horse should be isolated in a loose box as far away as possible from the other animals, and a strict quietude be maintained. The box should be darkened, the bedding should consist of short straw, and as soon as practicable the patient should be placed in slings, light warm clothing should be placed on the body. The drainage and ventilation of the box should be as nearly perfect as possible, and great attention should be paid to the size and number of the air inlets and outlets of the box—for this reason; in excessive muscular contraction a large amount of CO_2 is given off by an animal, therefore in tetanus the amount of gas absorbed from the tissues and exhaled per hour will greatly exceed the normal amount exhaled during the same period by a healthy animal at rest, viz., three cubic feet, consequently the means of exit for the vitiated air must be adequate, and the supply of pure air per hour must be proportionately sufficient.

If a wound is obvious it should be thoroughly cleansed and disinfected, preferably with a solution of iodine. If there is an accumulation of fæces in the rectum they should be removed and a soap and water enema injected. If the urinary bladder is distended through the spasmodic contraction of the neck of that organ, the catheter should be passed.

The food should be nutritious and of a laxative nature. When trismus is marked, food of a sloppy consistence should be allowed. If drugs are to be administered they should be given in the drinking water, in the form of an electuary, per rectum, or subcutaneously.

Up to the present time different methods for the curative treatment of tetanus have been adopted with indifferent success, the use of medicines in this country has been given a trial extending over a period of about a century; belladonna, prussic acid, chloral, morphia, aloes, mag. sulph., each in turn has been credited with the cure of this most distressing disease. Subcutaneous and intravenous injections of antitoxin in this country have been resorted to with similar questionable success. When we come to consider the fact that tetanus toxin has an especial affinity for the nerve centres, I think we possess in the intracerebral injection of the tetanus antitoxin a reasonable means of attempting on a scientific basis the neutralisation of the toxin in the central nervous system.

The British literature on the subject is at preesent very meagre. *Villar records two cases in which he gave intracerebral injections of anti-tetanin with apparently marked success, to quote Case II, he says:—"On the 2nd of November last a hunter received a punctured wound in the off hind heel, and on the 23rd of the same month tetanus supervened. The course of the disease was acute, and by the 26th, the tetanic spasms were severe and trismus was very marked; on the morning of the 26th having injected 6 grains of cocaine under the skin, a hole was drilled in the parietal bone in the same way as in the case of the pony, and with my ordinary tuberculin syringe, I slowly injected 8 c.c. of pure anti-tetanin, pushing the needle into the cranial cavity to the depth of two inches. On the morning of the 27th the symptoms of tetanus had considerably lessened . . . . the horse was feeding well, and the movements of both limbs and jaws were much less stiff." Sixteen days after the intracerebral injection, Mr. Villar says the horse was practically well.

Perhaps with strict regard to asepsis and the injection of both hemispheres a more rapid recovery may be obtained in the future treatment of tetanus by the intracerebral method. If it would be possible to obtain freshly prepared serum in every instance we should then be armed with as powerful a weapon as it is possible to obtain in the present state of our knowledge in combatting this disease. There does not appear to me to be the cause for the heavy mortality due to this disease provided the lapse of time between the first appreciable manifestations and the application of a rational treatment is not too long.

The above principles and practice of treatment should also be carried out in the cure of tetanus of the domestic animals other than the horse.

With reference to the operation described by Mr. Villar, the essayist thought that chloroformisation of the animal during the operation would be an advantage. A hole could be made in one or more parietal bones with a guarded jeweller's archimedian drill, size No. 21 (*see illus.*), and instead of using an ordinary tuberculin syringe, he suggested piercing the dura and other membranes with a fine aseptic exploring needle, then inject the antitoxin by meant of a needle which Messrs. Arnold and Sons, West Smithfield, London, had made to the essayist's suggestion (*see illust.*). The advantages claimed for the needle are the presence of a travelling nut which would enable one to limit the depth of insertion for a large sized horse and a pony respectively; the point of the needle is less acicular than that of an ordinary tuberculin needle, consequently it is hoped

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there would be less risk of injury to the cerebral vessels and less compression of the brain substance.

The needle is made to fit the barrel of Arnold's tuberculin syringe, capacity 10 c.c.

Drill and needle for intracerebral injection of anti-tetanin, suggested by Horace L. Roberts, F.R.C.V.S., made by Arnold & Sons, West Smithfield, London.

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(*a*) *Serum Therapy*, by R. T. Hewlett, M.D., D.P.H.
(*b*) *Antitoxins and Therapeutic Sera*, reprint of lecture by R. T. Hewlett, M.D., D.P.H.
(*c*) *Veterinary Record*, 10th July, 1897.
(*d*) *Veterinary Record*, 18th Feb., 1905.

Mr. ROBERTS showed a series of diagrams illustrating the production of the anti-bodies.

DISCUSSION.

Mr. PACKMAN expressed his appreciation of the highly scientific paper which they had just listened to. It was of such a scientific character that he thought the general practitioner would hardly be able to deal with it. The practical part he thought they would all agree with, namely, as to treatment. Mr. Roberts had spoken of slings, but personally he did not like them, and would have to be firmly convinced of their utility before adopting them. Mr. Packman desired to congratulate Mr. Roberts upon receiving his higher degree, and hoped he would have the reward which that degree deserves.

Mr. WOODS wished to associate himself with the words of congratulation, and also thanked Mr. Roberts for his excellent thesis. It was a thesis which would probably rank or be superior to those sent in for that degree. The first point Mr. Woods desired to mention was that Mr. Roberts had referred to the tetanus bacillus as anærobic. This was generally said to be so. He would like further information as to this, for he thought that in more than one way it was not quite anærobic. Take the method of inoculating that culture for instance (a culture tube was exhibited) There would be some air mixed with the dissolved gelatine and they would find that the best growths would occur right at the bottom of the test tube. There was no doubt that the tetanus bacillus grew better in hydrogen, but he did not think it could be stated to be an anærobic bacillus absolutely. The gelatine culture goes weaker and weaker towards the surface. If it is an anærobic bacillus how is it you can find it in every spadeful of garden soil? The air goes far deeper into the soil than you have need to take your sample from which to cultivate the bacillus. He was not speaking as a bacteriologist but from notes he had made. Regarding phagocytosis he agreed it had no effect whatever in tetanus, for if it were an active agent there would be few fatal cases. It had been said that dark boxes were necessary, and he would like to be told why? With regard to slinging, he thought it impossible to lay down any law upon this point. Generally speaking if a horse could get up it was better not to be slung. There are, of course, horses who would not allow themselves to be slung.

Erlich's side chain theory is very interesting, but beyond its being interesting he had not the slightest idea as to whether it was correct or not.

Mr. WOLSTENHOLME did not feel himself to be in a position to criticize or offer remarks. He took it that the paper under consideration was rather an exposition of Erlich's theory. He supposed it was only now and then that we had scientists of that peculiar construction of mind having power of propounding scientific subjects and making them perfectly plain to ordinary individuals. Anyone who had listened to Sir Robert Ball would know what he (Mr. Wolstenholme) wished to convey. It is given to many men to be learned and appreciate deep scientific truths, but it is not given to many to give expression so that the ordinary mind could grasp their meaning. He felt himself to be not very clear as to the precise meaning with respect to Erlich's side-chain theory. Personally he was thankful to Mr. Roberts for having brought the subject before them, because it was only after repeated knocking at our doors that we awakened to comprehend facts which the man in the street has comprehended before ourselves. He scarcely thought it possible for ordinary minds to criticize the possibilities of such a theory as that placed before them. In the domain of organic chemistry where similar theories are to be found, they could be valued, tested, and experimented with in a far more comprehensive and definite manner than these problems of life. We were only at the very periphery of the question, and the theories held to-day will to-morrow be found to be half-truths, or altogether inaccurate; so that as we get to know more of what life is and of the various circumstances which modify and control life, he thought they would find that such theories as this of Erlich's would fail to hold water or become an axiom.

Respecting toxin produced by tetanus, we may have something more to learn in that respect. He did not know whether it was quite right to eliminate phagocytosis from the possible controlling factors in the case of tetanus poison. If we reflect, knowing as we do the enormous number of bacilli which are to be found in soil and manure, knowing also the large proportion of spores to be found in these same conditions, that wounds about the feet of horses are constantly occurring, wounds which in some cases you see plastered over with earth, there must be a great number of wounds which never develop tetanus and so are termed spontaneous cases of recovery. What could these be attributed to—for there must be a means to an end. He thought that phagocytosis was probably the channel by which the organism was defended, and he did not think they would be justified in eliminating the factor of phagocytosis.

There was also the practical side which he would like brought out. For instance, clinically we may have a case of tetanus developed, not in its acute form probably. Is the subcutaneous injection of any value? Is the intracerebral injection of any value. Then again, is it practical that in case of every wound we meet with in the horse we should have a supply of serum, or serum powder, and that we should inject each horse with such a wound with a dose of anti-tetanic serum, and perhaps continue to do so? He thanked Mr. Roberts for his paper.

Prof. WILLIAMS had great pleasure in supporting his friends in the vote of thanks to Mr. Roberts for having written such an able paper and having brought the subject before that meeting. Mr. Wolstenholme has spoken of the great difficulty most teachers have in making difficult things appear easy, and it seemed to him that Erlich's theory was a so technical that to the ordinary individual it is almost incomprehensible. Immunity was a subject we did not know enough of to make an ordinary person understand. He (Prof. Williams) frequently told his students they must remember that the tissues of the body are of the most complex chemical mixture that is known. In fact no chemist has yet been able to tell us all the properties in the albumen of the body. In explanation of the theory he took for simplicity the numbers 1 to 26 which he called the chemical bodies in the albumen of the body. He then too

26 organisms from A to Z which he termed organisms that cause disease. When A is introduced into the subject it seeks for No. 1 and you then have the compound A1. which either kills the animal or confers immunity on it. That compound is an inseparable compound for very many years and if A should happen to be reintroduced from any source into the system it seeks for No. 1, but No. 1 has disappeared because it is in chemical union with A and, not being able to find anything on which to build, the second A dies.

In connection with treatment, the latest method, which is still in its experimental stage, is the introduction of brain matter subcutaneously injected into the patient suffering from tetanus, or the theory that if you can get a ptomaine of the tetanus bacilli to combine with this brain matter it would combine with the nerve matter of the patient. This could be eliminated without the patient suffering from disease of the brain centres. Cases that have been so treated have been successful. He trusted they would hear more about it, and hoped they would find by laying a bait or trap for this organism that it would not only be efficacious in tetanus, but also in other cases where there is poison due to the ptomaine of a small number of organisms.

Speaking from the practical point of view he believed in a dark box for the reason that the animal kept in darkness is much less excited than when there is strong light shining in. He also was a believer in slings where the animal would stand them. From his experience he thought theoretically it would be a good thing to chloroform the horse when injecting anti-tetanic serum, but there would be considerable difficulty in chloroforming and successfully performing the operation. He was inclined to think that if a horse did not do well after being chloroformed the owner would probably blame the veterinary surgeon.

Mr. TAYLOR speaking as to the practical part of the paper agreed with Prof. Williams that if an animal would stand slings it was better to use them. He also advocated the use of dark boxes. With regard to the use of anti-tetanic serum in cases of tetanus he had found it practically useless, but according to an article appearing in one of our periodicals he had been giving insufficient doses. Hitherto he had not been successful.

Mr. MUNRO observed that so far as the theoretical part of the subject was concerned he would leave that to Mr. Roberts, but on the practical side he differed with the views expressed in the paper. A few years ago he went into Scotland, and whilst there his attention was drawn by a farmer to a horse which on examition was found to be suffering from well marked tetanus. The only treatment that horse got was to be tied up in a field and fed on gruel. He (Mr. Munro) was surprised to find that the animal recovered, so he determined to try this treatment, giving in addition sulphate of iron. Within the last three years he had had six cases of recovery—and also a few deaths, and he certainly believed in giving plenty of fresh air and light.

Mr. STENT wished to know what antiseptics would kill the organism in the culture and at what strengths.

Mr. CARTER said he had been greatly interested in the excellent paper read by Mr. Roberts. He would like to ask whether any other gentleman had adopted the sunlight treatment.

Mr. ROBERTS, in reply, desired to thank the meeting for the expressions of appreciation. In reply to Mr. Woods, referring to the tetanus bacillus being anærobic, he said the culture which was given to him by Dr. Hewlett, of King's College, London, he was informed was not typical in appearance. However, he was not an expert bacteriologist and would not care for it to go forth that he said the tetanus bacillus was not a strict anærobe. He believed a dark box to be absolutely essential in the treatment of tetanus.

Respecting prophylaxis he had recently read that the West of England veterinary surgeons had usually lost foals after being operated upon for umbilical hernia, but since adopting the practice of the previous injection of anti-tetanic serum they have not lost a foal from operative tetanus. He desired to thank Prof. Williams for the scholarly way in which he explained in a small compass Erlich's "side-chain" theory and immunity.

With regard to the injections of emulsions of rabbits' brains under the skin and panniculus at the flank of horses he (Mr. Roberts) thought a litre, which was the amount used in some experiments at the Veterinary College at Vienna, was rather a considerable quantity for injection at that situation; he did not know that the Vienna experiments had been repeated elsewhere.

With regard to the objection of Professor Williams to the use of chloroform, he thought that inasmuch as the general idea of tetanus was that it was a very fatal disease, he did not think the veterinary surgeon would meet with difficulty in the manner suggested.

With reference to the "sunlight" and "open-air" methods of treatment, he said that in the two cases recorded by Mr. Villar, the great saving in the length of the time occupied in the recovery of the animals, as compared with all other former methods of treatment, must be considered an advantage.

Mr. PACKMAN (the President) proposed that the meeting record to Mr. Roberts a hearty vote of thanks for his paper.

Mr. WOLSTENHOLME expressed pleasure in seconding the proposal, which was unanimously carried.

Mr. ROBERTS briefly acknowledged.

A vote or thanks to the President, proposed by Mr. Carter, brought the meeting to a close.

VICARIOUS EXCRETION.

One of the most remarkable facts in connection with the physiology of the animal body is the power by which the function of one organ can be performed by another. In the lowest organisms this power is most marked. The hydra consists for the most part of two layers of cells. The superficial layer serving as a cutaneous envelope while the deeper layer incloses the primitive alimentary canal and performs digestive functions. By the use of extreme care it is possible to turn the hydra inside out, so that the lower formerly digestive inner layer now is superficial and serves to protect the animal, while the former cutaneous layer surrounds the new digestive cavity and, what is more, it secretes a digestive liquid which, acting on the food, suffices for the nourishment of the hydra. Such exchange of functions is not very surprising in so low a creature, for the cells in the hydra are not very far removed from the unicellular amœba, where the same mass of protoplasm can undertake in turn, or even simultaneously, the most varied functions As we ascend the animal scale the actions of cells become more differentiated and with the increase of differentiation there is diminution of the power of undertaking many functions in turn. The cells become specialised and have to sacrifice a number of their powers in order to attain to greater perfection in the remainder. Yet even in the higher animals we find evidence that the same function can be exercised by more than one organ. A dog from which the spleen has been removed may be as healthy and as normal as a dog provided with a spleen, and though we may not be fully acquainted with the functions of this organ, yet from the well-being of the animal after splenectomy we may be assured that the functions of the spleen are being exercised by some other organ or organs. In some cases it is possible that there have been accessory spleens (lienculi) which have hypertrophied and thus replaced the organ which had been removed; but this explanation will not suffice for all cases, for necropsies have in some instances shown

that there have been none of these accessory spleens present.

Exactly the same observations have been made on human beings. Many times the spleen has been successfully removed, especially after injury, and yet by no symptom could it have been diagnosed that the spleen was not there. The functions of the spleen have been undertaken by some other tissues or organs. When one kidney has been removed the other undergoes a true vicarious hypertrophy, growing obviously larger and becoming capable of fulfilling completely the duties of its lost fellow in addition to its own. These well-known facts perhaps prompted Mr. F. Rowland Humphreys in the choice of the subject of his oration at the annual meeting of the Hunterian Society. For he discoursed in an interesting address on the Vicarious Excretion in Bright's Disease. The excretory function of the kidney is of the first importance, and Mr. Humphrey's paper was in the main an examination of the question as to how far other organs are capable of undertaking the functions of the kidney when it is diseased. The skin and the bowel are the organs which can endeavour to replace the kidney, but the extent to which the skin does so is much exaggerated in common opinion. In health the skin does excrete some urea and other nitrogenous products; it is true that the quantity is small, but in health the skin does not appear to replace the kidney at all, for, according to Leube, the nitrogen of the sweat is greatest in amount when it is greatest in the urine. In disease, however, it has been found that with small urinary excretion of urea the skin may excrete a greatly increased amount; in some cases it would appear that the epithelial cells are capable of allowing the passage of nitrogenous matter by dialysis in proportion to their loss of vitality.

Mr. Humphreys suggests that it might be possible to make use of an artificial diminution of vitality in the epithelium to increase its dyalysing power. The bowel has only recently received full recognition as an excreting agent of nitrogenous matters, for Kruger and Schittenhelm have shown that even in health four times as much of those substances classed as purin bodies pass out by the bowel as are excreted by the kidneys. It is also true of many other substances that excretion by bowel is by no means negligible, and in disease the value of the intestinal excretion may be greater still. Mr. Humphreys points out that if sodium and magnesium salts are administered in Bright's disease in order to carry off some of the accumulated toxins a large amount of the salts passes into the blood and this will induce by osmosis the passage of a large amount of tissue waste and toxins from the tissue, and as the kidneys are incapable of dealing with even the normal quantity of such substances they will set up a toxic condition. The subject of vicarious excretion, whether considered only in connection with Bright's disease or not, is extremely complex; the chemical and physiological problems are far more elaborate than used to be thought, and our increasing knowledge has hitherto only served to show how little we know. We know that the vicarious action of the skin and the bowel in renal disease is of vast importance, and really that is about all that we do know. But astute theoretical and pathological surmises are all the more welcome because at present an exact knowledge is small. The practical chemist and the observant clinician can keep the theorist from obtaining a hearing for theories only, while they are the first to allow that imagination has ever played a great part in the discovery of the truth.—*The Lancet.*

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.		Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Sheep Scab.	Swine Fever.	
		Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks	Out-breaks.	Slaughtered *
GT. BRITAIN. Week ended July 1		16	17	..	..	27	34	..	..	..	32	145
Corresponding week in	1904 ..	11	11	..	..	47	65	..	..	1	46	168
	1903 ..	13	20	..	..	28	57	..	.	..	29	235
	1902 ..	7	13	..	..	25	39	..	..	14	32	114
Total for 26 weeks, 1905		535	771	..	..	621	1081	..	..	643	422	2024
Corresponding period in	1904 ..	527	818	..	..	769	1387	..	..	1056	798	3863
	1903 ..	429	669	..	..	683	1135	..	..	1154	879	4191
	1902 ..	377	625	1	120	563	1032	12	2	1094	868	4098
IRELAND. Week ended June 24		..	..	..	..	1	2	..	..	1	2	6
Corresponding Week in	1904 ..	.	..	..	..	1	1	..	..	1	4	120
	1903 ..	1	1	..	..	..	..	..	..	..	3	88
	1902 ..	..	..	..	..	..	..	..	..	3	2	121
Total for 25 weeks, 1905		2	2	..	..	12	34	..	..	221	15	453
Corresponding period in	1904 ..	2	2	..	..	5	21	..	..	362	69	1705
	1903 ..	2	3	..	..	1	2	..	..	387	53	1467
	1902 ..	..	..	..	..	4	19	..	..	431	85	1714

Board of Agriculture and Fisheries, July 4, 1905.

Epizootic Lymphangitis, Week ending Jan. 14, 2 cases; Feb. 25, 2; Mar. 25, 10: May 27, 1; June 10, 1: 17, 4: 24, 2.

Department of Agriculture and Technical Instruction for Ireland, (Castle Street), Dublin, June 29, 1905.

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection.

Royal College of Veterinary Surgeons.

A meeting of Council of the Royal College of Veterinary Surgeons was held at the College, 10 Red Lion Square, W.C., on Thursday, July 6th, 1905, Mr. J. A. W. Dollar (President) occupying the chair. The following members were present:—Messrs. Abson, Banham, Carter, Cope, Dewar, Duck, Fraser, Garnett, Lawson, Locke, Mason, Mettam, McI. McCall, McKinna, Mulvey, Over, Shipley, Stockman, Thomson, Trigger, Williams and Wragg. Mr. G. Thatcher (Solicitor) and Mr. A. W. Hill (Secretary).

The SECRETARY read the notice convening the meeting.

ELECTION OF PRESIDENT.

The PRESIDENT: The first business for transaction at this meeting of Council is the election of a President.

Mr. TRIGGER: Mr. President, I have very much pleasure in rising to nominate a gentleman to succeed you in the important position of President for the ensuing year, whose name will, I believe, commend itself to every member of Council—I mean Mr. Abson, of Sheffield. (Cheers). I don't nominate Mr. Abson on the ground of seniority, because it is a ground which I entirely disbelieve in, although I believe Mr. Abson is very nearly, if not quite, the senior member who has not passed the Chair. Mr. Abson has served us for, I think, at least ten years on this Council. He has given undivided attention to its business; he has brought to bear upon it those commercial instincts which characterized him in his early professional life, and which perhaps accounts for the eminently successful manner in which he has done his duties. I am quite sure that he will preside over us with the dignity we have been accustomed to expect from the Chair. We know that Mr. Abson is not a partisan and not a man of strong feelings. We know that gentlemen who are partisans are gentlemen of strong feelings, but when they have occupied the Chair we have had notable illustrations of the way they have acted, and we have always had strict impartiality shown from the Chair. I claim for Mr. Abson that he will maintain, and, if possible, add to the confidence the Council have always reposed in him, and that we shall have every reason to be satisfied with the dignified manner in which he will represent us on public occasions. I have much pleasure in nominating Mr. Abson as President for the ensuing year (Cheers.)

Prof. WILLIAMS: I have much pleasure in seconding the nomination. I can speak of Mr. Abson as a fellow student and as a professional colleague for very many years, and during that time I am certain that all who have met him on professional matters and at this Council Board will agree with me that a more judicious man hardly exists. He is extremely fair-minded: he never gives an opinion without giving it full consideration, and I think he will be an ornament to the chair. (Cheers.)

Mr. LAWSON: As an old friend of Mr. Abson I should like to be allowed to support the nomination. He is an old member of this Council, and greatly respected everywhere I have much pleasure in supporting Mr. Trigger's proposition

The resolution was then put and carried with acclamation.

The RETIRING PRESIDENT (Mr. Dollar): Gentlemen, perhaps I may be permitted now to offer Mr. Abson my own felicitations as well as those of the Council on his election to this office. It is an office which is not only one of honour, but one of very great responsibility and difficulty. I entirely concur in the remarks that have been made by those gentlemen who have proposed, seconded, and supported Mr. Abson's election, and for my own part I beg respectfully to offer him the promise of my warmest and most loyal support during the year of office which he is about to enter upon.

(Mr. Dollar then vacated the Presidential chair, and retired with Mr. Abson from the Council Chamber for the purpose of investing the newly elected President with the robe and chain of office. On their return to the Council Chamber, Mr. Abson took the Presidential Chair amid hearty cheering).

Mr. COPE: It gives me very great pleasure indeed to propose a vote of thanks to our late President who has just vacated the chair. He has conducted his duties in a manner which has been satisfactory to ourselves and a great credit to himself.

Mr. CARTER: I have very great pleasure in seconding the proposition.

The PRESIDENT: (Mr. ABSON): Mr. Dollar and gentlemen, I thank you most sincerely for the very high honour you have paid me by electing me to this high and honoured position. I lay no claim to any special fitness for the post, but I crave your indulgence, and I think I may count upon your hearty support, so that I may hand down the best traditions of this Chair untarnished. To Mr. Trigger, Prof. Williams, and Mr. Lawson, I tender my sincere thanks for their very kind and flattering remarks, and I trust that my year of office will be pleasurable to all concerned I thank you, gentlemen. (Cheers).

I have now much pleasure in putting the resolution of thanks to the retiring President for his conduct during his year of office.

The resolution was put, and carried with acclamation.

Mr. DOLLAR, in reply, said: Gentlemen, at the present moment I do not wish to occupy much time in returning my thanks for the great honour you have done me, but I can assure you that if I spoke for the whole ensuing period of this sitting of the Board I could not sufficiently express my gratitude or my feelings in regard to the kind way, both in which I have been supported by you during my year of office, and for the kindly feelings with which I retire from the chair. The duties of the position are certainly onerous, but the feeling of support and loyalty which one meets with on every hand is really a rich reward for any trifling service that one may be called upon to carry out. During my year of office I think I have been specially fortunate. I had looked forward to it with some apprehension, and with the fear that it might be stormy; on the contrary, it has been a year of renewal of old friendships, and the making of many new ones. I retire from the chair with the most pleasant feelings; and the recollection of my year of office will be a bright spot to which I shall always look back during the whole of my life with the greatest pleasure and delight. (Cheers).

ELECTION OF SIX VICE-PRESIDENTS.

On the motion of Prof. Williams, seconded by Mr. Locke, the following six gentlemen were unanimously elected vice-presidents for the ensuing year: Mr. J. A. W. Dollar, Gen. Thomson, Prof. Dewar, Mr. Carter, Mr. Cope, and Mr. Over.

ELECTION OF TREASURER.

On the motion of Mr. Locke, seconded by Mr. Mason, Mr. F. W. Wragg was re-elected Treasurer by acclamation.

Mr. WRAGG: Mr. President and Gentlemen,—Thank you very much for the honour you have conferred upon me.

ELECTION OF SECRETARY AND REGISTRAR.

On the motion of Mr. Carter, seconded by Mr. Dollar, Mr. A. W. Hill was unanimously re-elected Secretary and Registrar for the ensuing year.

Mr. HILL: Gentlemen, I beg to thank you for the honour of my re-election.

This concluded the business of the Council meeting.

The quarterly and special meetings of Council followed, the proceedings of which were very protracted, lasting till nearly half-past six. A verbatim report of these will appear in our next and subsequent issues.

DAMAGES FOR A VETERINARY ASSISTANT.

At the Clitheroe County Court on Thursday, Joseph Henry Bland, assistant veterinary surgeon, Walsall, claimed from Richard Miller, veterinary surgeon, Clitheroe, the sum of £27 0s. 10d. for alleged breach of contract and expenses. Mr. J. J. Briggs appeared for plaintiff, and Mr. W. S. Weeks for the defendant.

Plaintiff stated that following on an advertisement in *The Veterinary Record* in January for a situation as veterinary assistant, he came to Clitheroe on January 31st to see defendant, and was engaged as assistant. The wage was to be £5 a month, and plaintiff was to have the use of a furnished house, defendant also to pay the carriage of the furniture, and there was to be a month's notice on either side. He commenced duties on February 6th, staying at Miller's house. Defendant said he was going to be married and was going away. Plaintiff arranged for his furniture and wife and children to come, and defendant discharged his housekeeper and a boy. On February 13th plaintiff went to Macclesfield to meet his wife and children, the furniture having been already sent off, and on arriving his wife handed him a telegram stating that defendant had decided not to have an assistant. The following day plaintiff came to Clitheroe to see defendant and asked him about the expenses, but defendant said he must pay his own. He had not obtained a situation since.

Cross-examined, plaintiff said it was part of the bargain that his wife should take charge of the house, but it was not arranged that she should come on the Monday following the engagement, the 6th, and that if she did not come on the Wednesday the job was off. Defendant gave no intimation of dissatisfaction before plaintiff went to fetch his wife.

Evidence bearing out plaintiff's story was given by Mary Elizabeth Bland, the wife.

Defendant's reply was that the engagement depended on the attendance of the wife on the Monday to take over the duties, and that when she did not arrive the engagement was at an end, defendant giving him 10s. as part expenses. Defendant said prior to plaintiff leaving he gave verbal intimation of dissatisfaction, and forwarded the telegram to make sure.

His Honour said there was no dispute about the man having been engaged, and there was no dispute about his having started, and for what excuse the man had been discharged he had not the slightest idea. To say he was discharged because his wife did not arrive was absurd. The only question was one of damages, and he awarded £21 10s. 10d., with costs.

PARLIAMENTARY.

HORSE DISEASE IN IRELAND.

In the House of Lords, Friday, June 30.

The EARL OF MAYO asked His Majesty's Government how many cases of epizootic lymphangitis had occurred amongst Artillery horses and troop horses in Ireland; how had these cases been dealt with; and whether there was any truth in the report that horses suffering from the disease or coming from infected stables had been sold to the public, and what measures had been taken to stop the spread of the disease.

The EARL of DONOUGHMORE said that there had been 37 cases of this disease among Army horses in Ireland. Of that number 35 horses were destroyed and two were cured. No horses from infected stables had been sold to the public within six months of the occurrence of the last case. That period had been fixed, after careful consideration, as affording absolute security. It was true that the disease was spreading in Ireland, but not among the Army horses. There had been no case in the Army since October, 1904. All horses in contact with infection were kept entirely apart. The War Office were fully alive to the danger of the disease, and had at once applied the most drastic remedies.

After further conversation, the subject dropped.—*The Times.*

IS IT RINDERPEST?—In the opinion of many of the leading stocksmen in South Durham and Cleveland the symptoms of the disease which has been reported as prevalent among the cattle of the district are similar to the rinderpest of 40 years ago.—*M.T.J.*

ARMY VETERINARY DEPARTMENT.

From a *Supplement of the London Gazette.*

LORD CHAMBERLAIN'S OFFICE,
St. James' Palace, June 30th, 1905.

CENTRAL CHANCERY OF THE ORDERS OF KNIGHTHOOD.

The King has been graciously pleased on the occasion of the Celebration of His Majesty's Birthday to give orders for the following appointments to, and promotions in, the Most Honourable Order of the Bath.

To be Ordinary Members of the Military Division of the Third Class or Companions:—

* * * *

Colonel Fred Smith, C.M.G., A.V.D., Principal Veterinary Officer South Africa.

Maj. F. C. Stratton, A.V.D., has been appointed to the charge of the Station Veterinary Hospital and Veterinary Mobilisation Stores at Aldershot, and to the command of the detachment Army Veterinary Corps at that station on reorganisation.

OBITUARY.

J. E. TAYLOR, M.R.C.V.S., Osmaston Rd., Derby.
Graduated, Lond: June, 1888.

Mr. Taylor's death occurred on Monday, June 26th.

CORRESPONDENCE.

OUR STRUGGLE FOR RECOGNITION—ONE RESULT.

Sir,

I enclose you extract from local paper which must be very painful reading to those who have worked so hard to have the profession recognised as it should be.

VETERINARY SURGEONSHIP.

A CARDIFF APPOINTMENT.

At a meeting of the Health Committee of the Cardiff Corporation to-day Dr. Walford, medical officer of health, presented a report embodying his suggestions with regard to the vacant veterinary surgeonship, caused by the resignation of Mr. Moir. He pointed out that Mr. Moir had held the office of veterinary surgeon and meat inspector under the Health Committee at £200 per annum, and inspector under the C.D. Animals Act (Property and Markets Committee) at £100 per annum. He suggested it was now unnecessary to employ a veterinary surgeon as meat inspector, as the men engaged at the slaughterhouse were qualified to

act in the latter capacity, and that the veterinary surgeon would only be required by the Health Committee to take medical charge of the horses, and perform the duties under the Dairies, Cowsheds, and Milkshops Order. The Committee decided to advertise for a veterinary surgeon to perform these duties, applicants to state terms per horse per annum, and to appoint Mr. F. L. Perry to act as veterinary surgeon pending a permanent appointment. Councillor Chappell protested against the latter part of the Committee's resolution, and said he should oppose it at the meeting of the Council." *South Wales Echo*, June 27th.

We have all been congratulating ourselves that at last there were signs that before many years would elapse a number of appointments would be available to the younger members of the profession who are so thoroughly qualified by the greatly advanced and improved instruction given them at our Colleges on this special branch of study.

But here, alas, in a town which is looked upon as one of the most progressive in the country, we are calmly asked to stand back, and our wheel of progress smashed and all our bright hopes of advancement dashed to the ground—and by whom? By none other than those whom, in the majority of instances, I call "our natural enemies," and who pose as the "awfully superior person" in professional knowledge, and who, of course, claim such an exalted social position that we are only allowed on sufferance perchance to touch the fringe of their garments.

Thank God there are some medical men who do recognise our own special calling and give us the credit we deserve, but there are others whom I have met and who, when attending some member of the household, or perhaps invited to dinner, and there happens to be in the stable at the time a horse under treatment by "the vet." as they are pleased to dub us, give expression to their profound knowledge, which in our practical eyes only makes them look the proverbial ass.

There are things we can eventually live down, but in my case I have never failed to give them my opinion of their knowledge.

Then, again, you note that tenders are to be invited for the attendance upon horses and certain other duties. Is that a compliment to the profession? I think not, but rather a slur, and shows that we are not yet holding our own position.

Do corporate bodies ask for tenders when they require a medical officer of health and medical officers to act for the police or poor? or do they ask for tenders when they require a town clerk or prosecuting solicitor? No, they advertise and say the appointment is vacant, the salary is so much and condition of service so-and-so, they ask for applications with testimonials. That is as it should be, but we, the members of this noble profession, who delusively imagine ourselves somebody, are placed side by side with the commercial man, who quotes his goods at so much a pound. Truly a nice position for members of a profession.

As far as I can judge it will be a very long time before this condition of affairs is altered, and those who know me know that I am in a position to speak.

I have three boys of my own, and I would rather see them, to use the expression of a now eminent member of our profession, "cracking stones on the roadway," than that they should enter such a profession. Thank goodness neither intend wasting their time or their father's money at College.

For the information of those who do not know I may say that the Mr. Moir referred to in the paper is a very old and respected member of the profession who has been in practice in Cardiff for some 45 years or more. He retired from his ordinary professional work some eight years or more ago and accepted this special appointment. He is now retiring because of his age and health, so these are the circumstances under which the opportunity has been given to our Medical Officer of Health.

Thanking you in anticipation for inserting this.—I am, yours truly,

A. C. Stewart.

BOARD OF AGRICULTURE AND VETERINARY INSPECTORS.

Sir,

The following information might be usefnl to Mr. H. Hogben, Folkestone.

The appended local authorities have no special police arrangements such as obtain at Folkestone. The veterinary inspector in most instances is the executive officer:—

Luton, Chepping, Wycombe, Chester, Workington, Barnstaple, Exeter, Tiverton, Torquay, Davenport, Gateshead, Hartlepool, Sunderland, West Ham, Winchester, Bromley, Accrington, Ashton-under-Lyne, Bacup, Bolton, Chorley, Colne, Darwen, Eccles, Leigh, Manchester, Rawtenstall, Burnley, Salford, Leicester, City of London, County of London, Hornsey, County of Middlesex, King's Lynn, Norwich, Yarmouth, Newcastle-on-Tyne, Tynemouth, Wallsend, Oxford, Bath, Hanley, Wolverhampton, Ipswich, Croydon, Kingston-on-Thames, Richmond, Brighton, Hove, Leamington, Salisbury, Dudley, Barnsley, Doncaster, Keighley, York, Leeds, Sheffield, and the majority of the local authorities in Scotland.—Yours faithfully,

"Corona veniet delectis."

FOAL BY YEARLING COLT.

Sir,

As we are sometimes asked if there is much risk of yearling fillies getting in foal by yearling colts when they are running together in the spring, I enclose a well authenticated case which occurred on the farm of Mr. Henry Turner, Mickfield Hall, Stowmarket. The breed is Suffolk Punch. Yours faithfully,

T. G. Heatley, M.R.C.V.S.

Woodbridge, Suffolk, July 3.

Maggie, Vol. XIV., No. 5270. Foaled April 10th, 1903.
Horse Foal, foaled April 21st, 1903.

Maggie, No. 5270, gave birth to a good filly foal on Monday, June 26th, 1905, at the age of between 26 and 27 months old by the horse foal, foaled April 21st, 1903.

Dam of Maggie (5270) Milley 4316.

Both the above were by Rendlesham Arthur 2866.

THE ART OF ADVERTISING.

Sir,

As I am very much interested in the articles on this subject that have appeared of late in your valuable journal, I will pen a few lines to add to the discussion.

In a by-road off an important thoroughfare is a solitary office, having affixed outside of it a brass plate etc. bearing the name and profession of a venerable gentleman of pious renown, and whose logic is more verbose than scientific. Immediately to the left and adjoining this office is a mews containing a stable used as a so-called infirmary or sanatorium.

The windbag of sanctity probably finding trade very slow, and afraid of the spectre of the Registration Committee looming in the distance, believes he can see his way clear to add to his income, and at the same time to evade the vigilance of that dreadful ghost, advertises his "sanatorium," but not under his own name. He is also distributing freely circulars appertaining to the merits and utility of his sanctum.

Now, sir, as I am a young practitioner thinking of starting for myself, I would like to imitate my venerable brother as I believe his idea to be a capital one. But before attempting to adopt it I would like to ask you, What remedy has the Registration Committee of the R.C.V.S. against this bit of professional piety?

"Pulsatilla."

Communications and Papers received.—Messrs. E. White Wallis, W. H. Flook, A. C. Stewart, Lt. W. E. Schofield. "The Doctor Sahib." "Corona veniet delectis." Mrs. G. B. Behrens.

Sheldrake's Aldershot Military Gazette, The Gas and Oil Engine Record, The Evening Standard.